

Application No. 09/180,657  
Amendment dated March 4, 2003  
Reply to Office action of November 4, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

[ 1-21. (Canceled) ]

22-51. (Withdrawn)

52. (Currently amended) A method of detecting a lysosomal storage disorder (LSD), monitoring the progress of a LSD or the efficacy of treatment of a LSD in a human or animal subject, the method comprising assaying the level of a LSD marker in a biological sample derived from the subject, wherein

the biological sample is a blood, serum, plasma or urine sample;

the LSD marker is selected from the group consisting of Lamp-1 (lysosome-associated membrane protein type-1), 4-sulphatase and  $\beta$ -hexosaminidase,  $\beta$ -hexosaminidase; and

an increase in the level of the LSD marker in the subject relative to the corresponding level of the LSD marker in a non-affected individual or population being is indicative of a LSD.

[ 53-54. (Canceled) ]

55. (Previously amended) The method according to claim 52, wherein the LSD marker is Lamp-1.

[ 56-57. (Canceled) ]

58. (Currently amended) The method according to claim 52, wherein the biological sample ~~comprises~~ is a blood, plasma, or serum urine, a fibroblast cell, a fibroblast cell culture or a fibroblast cellular extract sample.

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59. (Currently amended) The method according to claim 55, wherein the biological sample comprises is a blood, plasma, or serum urine, a fibroblast cell, a fibroblast cell culture or a fibroblast cellular extract sample.

60. (Currently amended) The method according to claim 55 59, wherein the biological sample comprises is a blood, plasma or urine sample.

[61-62. (Canceled)]

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63. (Previously added) The method according to claim 52, wherein the LSD is selected from the list set forth in Table 1.

64. (Previously added) The method according to claim 63, wherein the LSD is selected from the group consisting of MPS I, MPS II, Gaucher disease, Pompe disease and Salla's disease.

65. (Previously amended) The method according to claim 52, wherein the step of assaying the level of a LSD marker comprises measuring the enzyme activity of said LSD marker in the biological sample.

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66. (Currently amended) The method according to claim 52, wherein the step of assaying the level of a the LSD marker comprises contacting the biological sample with one or more antibodies specific for said the LSD marker for a time and under conditions sufficient for the formulation of a complex to occur.

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[67. (Canceled)]

68. (Previously amended) The method according to claim 66, wherein the one or more antibodies are monoclonal antibodies.

69. (Previously amended) The method according to claim 66, wherein the one or more antibodies is/are labeled with a reporter molecule.

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70. (Currently amended) The method according to claim 66, further comprising the step of contacting a the complex formed between the LSD marker and one of the one or more antibodies with a labeled antibody for a time and under conditions sufficient for binding to occur.

71. (Previously amended) The method according to claim 70, wherein the labeled antibody is labeled with a reporter molecule.

72. (Previously added) The method according to claim 69, wherein the reporter molecule is an enzyme, a fluorophore or a radionuclide molecule.

73. (Previously added) The method according to claim 72, wherein the enzyme, fluorophore or radionuclide molecule is selected from the group consisting of horseradish peroxidase, glucose oxidase,  $\beta$ -galactosidase, alkaline phosphatase, fluorescein,  $\text{Eu}^{3+}$  and other lanthanide metals, and rhodamine.

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74. (Currently amended) The method according to claim 52, wherein:

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- (a) the LSD is selected from the list set forth in Table 1;
  - (b) the LSD marker is LAMP-1;
  - (c) the subject is a human; and
  - (e)(d) the biological sample ~~comprises~~ is a human blood, ~~serum~~ plasma or urine sample; and
  - (d) ~~the assay comprises measuring the enzymatic activity of the LSD marker or is an immunoassay.~~

[ 75-92. (Canceled) ]

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93. (Currently amended) A method for detecting a lysosomal storage disorder (LSD), comprising assaying LAMP-1 (lysosome-associated membrane protein type-1) in a

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sample of blood obtained from a patient that is asymptomatic for a LSD, an increase in the level of LAMP-1 in the patient relative to the corresponding level of LAMP-1 in a non-affected individual or population being indicative of a LSD.

[ 94. Canceled. ]

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95. (New) A method of detecting a lysosomal storage disorder (LSD), monitoring the progress of a LSD or the efficacy of treatment of a LSD in a human or animal subject, the method comprising assaying the level of a LSD marker in a biological sample derived from the subject, wherein

the LSD marker is selected from the group consisting of Lamp-1 (lysosome-associated membrane protein type-1), 4-sulphatase and  $\beta$ -hexosaminidase;

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the LSD is selected from the group consisting of Galactosialidosis, Gaucher disease, CM1-gangliosidosis,  $\alpha$ -Mannosidosis, Mucopolysaccharidosis (MPS) I, MPS II, MPS IIIA, MPS IIIB, MPS IIIC, MPS IIID, MPS IVA, MPS VI, Multiple sulphatase deficiency, Sandhoff disease, Sialic Acid Storage disease, Tay-Sachs disease, Wolman disease and Salla's disease; and

an increase in the level of the LSD marker in the subject relative to the corresponding level of the LSD marker in a non-affected individual or population is indicative of a LSD.

96. (New) The method of claim 5, wherein the LSD marker is Lamp-1.

97. (New) The method of claim 95, wherein the LSD is selected from the group consisting of MPS I, MPS II, Gaucher disease, Pompe disease, and Salla's disease.

98. (New) The method according to claim 95, wherein the biological sample comprises blood, plasma, serum, urine, a fibroblast cell, a fibroblast cell culture or a fibroblast cellular extract.

99. (New) The method according to claim 98, wherein the fibroblast cell, fibroblast cell culture or fibroblast cellular extract is a Pompe, Salla, MPS II or MPS VI fibroblast cell, cell culture or cellular extract.

100. (New) The method according to claim 98, wherein the biological sample is a blood, plasma, serum or urine sample.

101. (New) The method according to claim 96, wherein the subject is a human.

102. (New) A method of detecting a lysosomal storage disorder (LSD), monitoring the progress of a LSD or the efficacy of treatment of a LSD in a human or animal subject, the method comprising assaying the level of Lamp-2 (lysosome-associated membrane protein type-2) in a biological sample derived from the subject, wherein

the LSD is selected from the group consisting of Pompe disease, Gaucher disease and a Mucopolysaccharidosis (MPS) disease, and

an increase in the level of the LSD marker in the subject relative to the corresponding level of the LSD marker in a non-affected individual or population is indicative of a LSD.

103. (New) The method of claim 102, wherein the LSD is Gaucher disease or MPS I.

104. (New) The method of claim 102, wherein the biological sample comprises blood, plasma, serum, urine, a fibroblast cell, a fibroblast cell culture or a fibroblast cellular extract.

105. (New) The method according to claim 104, wherein the biological sample is a blood, plasma, serum or urine sample.

106. (New) The method according to claim 102, wherein the subject is a human and the biological sample is a human blood, plasma, serum or urine sample.